ACT was detected immediately, while AFXa were detected by Factor Xa ELISA kit within 3 months. Data was analysed by different diseases, kinds of LMWH, gender, ages and different renal functions.

Results (1) The AFXa and ACT values were significantly higher in the group that received LMWHs (0.806 ± 0.050 IU/ml, 285 ± 125 s) than in the control group (0.617 ± 0.042 IU/ml) and the ACT reference range (119–195 s) ($p < 0.01$). ACT showed a linear correlation with AFXa ($r = 0.310$). Neither AFXa nor ACT had statistical differences in samples collected at different days. (2) There were no significant differences in the AFXa and ACT values in the ACS group and the VTE high risk group. A linear correlation between AFXa and ACT was found in both groups ($r = 0.233, 0.409$). (3) There was no significant difference in the AFXa in both Nadroparin and Enoxaparin groups. ACT values in Nadroparin group were lower than those in Enoxaparin group ($p = 0.034$). A linear correlation was found in both groups ($r = 0.317, 0.576$). (4) AFXa and ACT were higher in male than those in female ($p = 0.032, 0.037$). A significant linear correlation between AFXa and ACT was found only in male patients ($r = 0.335$). (5) There were no significant differences in AFXa and ACT values in patients with different ages. A significant linear correlation between the AFXa and ACT was found only in the patients above 80 years ($r = 0.551$). (6) There were no significant differences in the AFXa and ACT values in groups with different renal functions. A significant linear correlation between AFXa and ACT appeared only in the patients with GFR 30–60 ml/min ($r = 0.415$).

Conclusions (1) LMWHs can increase the level of AFXa and prolong ACT. (2) The correlation between the AFXa and ACT probably exist. (3) ACT detected by the Sonoclot Analyzer may be used as a bedside method for monitoring the anticoagulation effect of LMWHs, especially for the very elderly and the patients with renal dysfunction.

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COMPARISON OF ANTI-XA FACTOR ASSAY AND ACT FOR MONITORING THE ANTICOAGULATION EFFECTS OF LOW-MOLECULAR-WEIGHT HEPARINS IN ELDERLY PATIENTS

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Background Since the routine method of anti-Xa factor assay cannot be used as a bedside test, this study was designed to investigate the correlation between activated clotting time (ACT) detected by a Sonoclot Analyzer and the anti-Xa factor assay.

Methods A total of 84 patients older than 60 years with acute medical diseases admitted in Beijing Tongren Hospital from July to December, 2010 who were given enoxaparin or nadroparin subcutaneously for at least 5 days were enrolled and, divided into two groups. The ACS group ($n = 52$) was dosing generally 1 mg/kg twice a day, but with a half dose in the condition of serum creatine above $177 \mu\text{mol/l}$. The remainder as the VTE high risk group ($n = 32$) received 40 mg once daily. Another 44 healthy subjects as the control group received no anticoagulants. Blood samples were collected at the second and the fifth days after LMWH administration for detecting ACT and plasma anti-Xa factor activity (AFXa).